

WHAT IS CLAIMED IS:

- 1 1. A method for treating a film of material, said method comprising:
2 providing a substrate comprising a cleaved surface, said cleaved surface
3 being characterized by a predetermined surface roughness value; and
4 increasing a temperature of said cleaved surface to greater than about
5 1,000 Degrees Celsius while maintaining said cleaved surface in a hydrogen bearing
6 environment to reduce said predetermined surface roughness value by about fifty percent
7 and greater.
- 1 2. The method of claim 1 wherein said distribution of hydrogen
2 treating said cleaved surface during a portion of said increased temperature.
- 1 3. The method of claim 1 wherein said hydrogen bearing environment
2 is derived from an HCl gas and a hydrogen gas.
- 1 4. The method of claim 3 wherein said HCl gas and said hydrogen gas
2 is at a ratio of about 0.001 to 10.
- 1 5. The method of claim 4 wherein said ratio of said HCl gas and said
2 hydrogen gas is about 0.001 to 10 and greater.
- 1 6. The method of claim 1 wherein said substrate is maintained at
2 about 1 atmosphere during said hydrogen treatment.
- 1 7. The method of claim 1 wherein said cleaved surface is provided by
2 a controlled cleavage process.
- 1 8. The method of claim 1 wherein said substrate is a silicon wafer.